

UNCLASSIFIED

AD NUMBER
AD815557
NEW LIMITATION CHANGE
TO Approved for public release, distribution unlimited
FROM Distribution authorized to U.S. Gov't. agencies and their contractors; Critical Technology; DEC 1965. Other requests shall be referred to US Army Biological Labs., Fort Detrick, Frederick, MD 21701.
AUTHORITY
SMUFD/Fort Detrick ltr dtd 15 Feb 1972

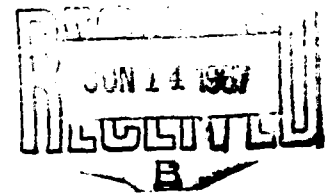
THIS PAGE IS UNCLASSIFIED

AD815557

OBSERVATIONS ON THE LYSIS OF PLAGUE CULTURES IN RELATION
TO THE SPECIES OF BACTERIOPHAGE USED

Translation No. 1120

DECEMBER 1965

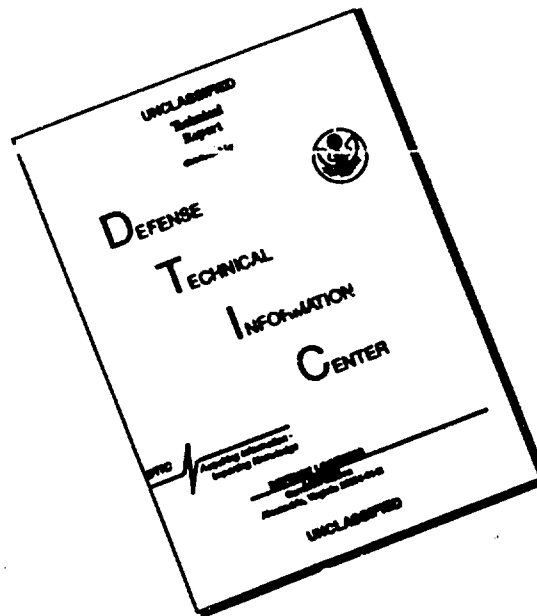


STATEMENT #2 UNCLASSIFIED

This document is subject to special export controls and each
transmittal to foreign governments or foreign nationals may be
made only with prior approval of -----

U. S. ARMY
BIOLOGICAL LABORATORIES
FORT DETRICK, FREDERICK, MARYLAND

DISCLAIMER NOTICE



THIS DOCUMENT IS BEST QUALITY AVAILABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

DOCUMENT ID	
DATE	DATE RECEIVED
30	1968
A. NUMBER	
B. INFORMATION	
C. SOURCE	
D. SUMMARY	
E. COMMENTS	
F. REFERENCES	
G. OTHER	

DDC AVAILABILITY NOTICE

Qualified requestors may obtain copies of this document from DDC.

This publication has been translated from the open literature and is available to the general public. Non-DOD agencies may purchase this publication from Clearinghouse for Federal Scientific and Technical Information, U. S. Department of Commerce, Springfield, Va.

Technical Library Branch
Technical Information Division

OBSERVATIONS ON THE LYSIS OF PLAGUE CULTURES IN RELATION
TO THE SPECIES OF BACTERIOPHAGE USED

Following is the translation of an article by T. P. Kudinova, published in the Russian-language periodical Materialy Nauchnoy Konferentsii po Prirodnoy Ochagovosti i Profilaktike Chumy (Materials from the Scientific Conference on the Natural Focality and Prophylaxis of Plague) Alma-Ata, Feb., 1963, pages 128--129. Translation performed by Sp/7 Charles T. Ostertag, Jr.]

As is known, strains of the plague microbe are subject to lysis not only by plague, but also by pseudotuberculosis bacteriophage.

For a comparative study of the nature of lysis of plague microbes under the action of each of these bacteriophages we inoculated broth with a culture of the plague microbe, strain EV or 265 (with an attenuated virulence), with a calculation of 1,000 microbial bodies per 1 ml of broth. Into the broth tube we added plague or pseudotuberculosis bacteriophage (diagnostic polyvalent, prepared by the Central-Asian Scientific-Research Antiplague Institute) until its content in the medium was at a titer of 10^6 . In order to suppress the action of the bacteriophage we added the neutral red dye to the medium after a specific interval of time. In 15 minutes following the addition of the dye inoculations on agar were made for determining the viable microbial cells in a unit of volume, with a subsequent colony count.

In the broth tubes to which pseudotuberculosis phages had been added, as well as in the tubes without it (the control), the content of live microbial cells during the first hours following inoculation did not differ essentially from the initial content. After 24 hours the amount of viable organisms was found to have increased by 5--10 times both in the cultures containing pseudotuberculosis phages and in the control.

After 48 hours and later the content of viable microbial cells in the medium with the pseudotuberculosis bacteriophage was considerably below that in the control, but still exceeded their original number by tens and even hundreds of times. Even after longer intervals the complete lysis of *P. pestis* in the tubes containing pseudotuberculosis phages did not come about.

The lysis of cultures under the influence of plague bacteriophage took place differently. Already in 30 minutes following inoculation there was preserved in the broth only $1/5$ -- $1/15$ of the viable cells, and in 24 hours and later the isolation of individual microbial cells was possible only in isolated cases.